

Therefore, in the present invention as recited, for example, in claim 164, the first amplifier, the dispersion compensator and the second amplifier are not simply dispersed along the transmission line in an unrelated manner. Instead, these elements are included within a multi-stage optical amplifier. There are many advantages of a multi-stage optical amplifier which provides amplification and dispersion compensation, with a dispersion compensator between optical amplifiers, as compared to individual amplifiers and dispersion compensators being dispersed along the transmission line in a generally unrelated manner. See, for example, FIGS. 37, 38 and 39, and the disclosure on page 103, line 19, through page 106, line 14, of the specification. See especially page 106, lines 6-14, of the specification.

The Examiner asserts that, in FIG. 14 of Antos, OFA-2, the DC fiber, and OFA-3 together form a multi-stage optical amplifier.

However, it is respectfully submitted that, in FIG. 14 of Antos, OFA-2 is positioned somewhere along the transmission line, but not in the same multi-stage optical amplifier as OFA-3. For example, FIG. 14 of Antos does not show any enclosure enclosing both amplifiers OFA-2 and OFA-3. Column 17, lines 33-58, of Antos, relate to FIG. 14 of Antos, but do not disclose or suggest that OFA-2 is in the same multi-stage optical amplifier as OFA-3.

FIG. 14 of Antos shows a "dotted box" around the DC fiber (22 km), OFA-2 and DC fiber (11km). However, it is clear that this "dotted box" does not include OFA-2. Moreover, this "dotted box" is not intended to represent any type of multi-stage optical amplifier. Instead, from column 17, lines 53-57, of Antos, it is clear that the "dotted box" in FIG. 14 is used to show that a total length of DCF (22km + 11 km) was divided into two sections, to increase the power level at the input of OFA-3. Accordingly, in FIG. 14 of Antos, a "dotted box" around the DC fiber (22 km), OFA-2 and DC fiber (11km), along with another "dotted box" around DC fiber (6.4 km), is used to highlight the relationship between the various DC fibers in the system.

Further, Antos does not disclose or suggest any reason to include OFA-2, DC fiber (11 km) and OFA-2 in the same multi-stage optical amplifier.

Therefore, it is respectfully submitted that FIG. 14 of Antos shows optical amplifiers and DC fibers dispersed along the transmission line, but does not show a "multi-stage optical amplifier" which includes a first amplifier, a dispersion compensator, and a second amplifier, as recited, for example, in claim 164.

Further, please note that the claims recite the amplification of a "WDM" optical signal.

FIG. 14, and the corresponding disclosure in column 17, lines 33-58, of Antos, do not disclose or suggest the amplification of a WDM optical signal. Instead, it is respectfully submitted that FIG. 14 simply shows a pattern generator generating and transmitting a 10 Gbit/sec signal. This 10 Gbit/sec signal is NOT a WDM optical signal.

As noted by the Examiner in item (b) on page 2 of the Office Action, FIG. 2 of Antos shows the use of WDM. More specifically, FIG. 2 of Antos discloses a WDM optical signal including light at 1310 nm and 1550 nm multiplexed together.

However, the 1310 nm and 1550 nm lights are demultiplexed by coupler (demultiplexer) 16. The demultiplexed light at 1550 nm is optically amplified by an optical amplifier 13. The demultiplexed light at 1310 is amplified by a conventional "electrical" repeater 17, which converts the light to an electrical signal, amplifies the electrical signal, and then converts the amplified electrical signal into an optical signal. See, for example, column 8, lines 50-65, of Antos. Therefore, it is respectfully submitted that no portion of FIG. 2 discloses a WDM optical signal being amplified by an optical amplifier. Instead, in FIG. 2 of Antos, each wavelength is demultiplexed and individually amplified.

Therefore, it is respectfully submitted that no portion of Antos discloses or suggests a "WDM" optical signal which is amplified by a "multi-stage optical amplifier", as recited, for example, in claim 164.

In view of the above, it is respectfully submitted that the rejection is overcome.

III. REJECTION OF CLAIMS FOR OBVIOUS-TYPE DOUBLE PATENTING
OVER USP 5,602,666

A Terminal Disclaimer is submitted herewith, to overcome the rejection.

IV. IDS

Please note that an IDS was filed concurrently herewith.

V. CONCLUSION

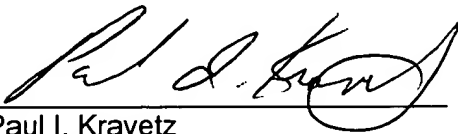
In view of the above, it is respectfully submitted that the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If any further fees are required in connection with the filing of this response, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

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